deep, the octopus is a shy, retiring creature. He likes to hide in hollows in the rock along the shore.

Fishermen interested in mass capture of octopuses have developed an ingenious system. They lower hollow earthenware pots to the bottom by means of cords. The octopuses enter the pots and make themselves at home. Then the fishermen pull up the pots. The octopus seems reluctant to leave the cosy pot, so the fishermen can pull the pot to the surface before the octopus makes his getaway.

Dr. Paul Bartsch, curator of Marine Invertebrates at the U. S. National Museum, quotes another story to show how the same retiring, shy trait of the octopus has been made use of to capture, not the octopus, but archaeological treasure from the bottom of the sea.

Many years ago, a ship carrying a very valuable cargo of porcelains from Korea was wrecked off Japan, taking the precious pottery to the bottom.

In recent years, fishermen in the vicinity hit upon a way of recovering the pots. They tie strings to octopuses and lower them to the bottom. The octopuses creep into the pots and hang on to them while the fishermen pull them to the surface.

Thus is archaeology indebted to the octopus.

Prototype of Jet Propulsion

The cephalopod is the prototype of jet propulsion.

Water is taken into the mantle cavity between the free edge of the mantle and the body. When the creature is at rest, the water can wash out again through the same opening. But when he wants to move, that opening is closed and the water is driven out with great force through a siphon. This drives the animal backwards through the water at considerable speed.

The octopus and his relatives among the cephalopods have an unusual defense against enemies. A glandular sac produces a dark fluid which the animal can discharge at will.

When the animal is pursued, he can throw out this "ink" as a "smoke-screen" which hides him while he makes good his escape. One scientist has suggested that the ink may serve as decoy or camouflage rather than screen. The ink pool is about the size of an octopus and assumes about the same shape and the enemy may be led to pursue this false octopus while the real one gets away.

This octopus "ink" has its use in printing and photography. It is the sepia that gives the admired brown tone to illustrations.

Science News Letter, March 30, 1957

A four-pound *plastic relief map,* showing South America as it might be seen through a flyer's eyes, is now available.

Adoption of *dry pelleted diets* as standard rations by all state fish hatcheries in Michigan increased trout production (in pounds) by 60%.

AERONAUTICS

To Fly Higher, Faster

➤ AN AIRPLANE that will fly higher and faster than man has ever ventured before is being built for the National Advisory Committee for Aeronautics. The research craft is called the X-15.

Details of its design and expected performance are secret, but it will be used to gather information on the problem of reentering the earth's atmosphere and the heating effects then encountered. It will also be used to obtain data on the heating, stability and control of airplanes operating at extreme speeds and altitudes.

These few items on the X-15 were revealed in hearings by the House Subcommittee on Appropriations in Washington. The research airplane is being built by North American Aviation Corporation for the Air Force, to specifications made jointly by the Air Force, Navy and NACA.

Information recorded using the X-15 will be applied to designing hypersonic airplanes and missiles. It is expected to fly in the 7,000 mile-an-hour range.

Highest speed yet attained by a piloted airplane is "well above" two and a half times the speed of sound, which is about 760 miles an hour at sea level. Unofficial reports indicate the plane, the NACA's Bell X-2, reached 2,100 miles an hour at an altitude of 126,000 feet before it crashed last Sept. 27.

Dr. James H. Doolittle, chairman of the NACA, told the committee the reasons for its crash were known, but his explanation of them was taken out of the record for security purposes. The hearings do reveal, however, that instrument records from the plane were salvaged, including one of the "most striking movies" Dr. Doolittle has ever seen.

Photographed by a camera inside the cockpit, he said, were the instrumentation, the pilot's head and his reactions during the entire final flight of the X-2.

In spite of the risk, however, pilots and not electronic equipment will have to be used to fly research airplanes. The reason is that an automatic pilot cannot be installed until it is known what the airplane is going to do.

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